FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT

U.S. Department of Energy

Office of Biological and Environmental Research (OBER)

Genomics: GTL Facility for the Production and Characterization of Proteins and Molecular Tags

Funding Opportunity Number: DE-PN02-06ER64154

Announcement Type: Initial

CFDA Number: 81.049

Issue Date:	**01/09/2006**
Letter of Intent Due Date:	**01/31/2006**
Funding Opportunity Announcement Conference:	**02/22/2006**
Pre-Application Due Date:	**Not Applicable**
Application Due Date:	**04/11/2006 at 8:00 PM Eastern Time**

NOTE: NEW REQUIREMENTS FOR GRANTS.GOV

Where to Submit
Applications must be submitted through Grants.gov to be considered for award.

Registration Requirements
There are several one-time actions you must complete in order to submit an application through Grants.gov (e.g., obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number, register with the Central Contract Registry (CCR), register with the credential provider, and register with Grants.gov). See http://www.grants.gov/GetStarted. Use the Grants.gov Organization Registration Checklist at http://www.grants.gov/assets/OrganizationRegCheck.doc to guide you through the process. Designating an E-Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in the CCR registration process. Applicants, who are not registered with CCR and Grants.gov, should allow at least 14 days to complete these requirements. It is suggested that the process be started as soon as possible.

Questions
Questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov. Part VII of this announcement explains how to submit other questions to the Department of Energy (DOE).

Application Receipt Notices
After an application is submitted, the Authorized Organization Representative (AOR) will receive a series of four e-mails. It is extremely important that the AOR watch for and save each of the emails. It may take up to two (2) business days from application submission to receipt of email Number 2. You will know that your application has reached DOE when the AOR receives email Number 4. You will need the Submission Receipt Number (email Number 1) to track a submission. The titles of the four e-mails are:

Number 1 - Grants.gov Submission Receipt Number
Number 2 - Grants.gov Submission Validation Receipt for Application Number
Number 3 - Grants.gov Grantor Agency Retrieval Receipt for Application Number
Number 4 - Grants.gov Agency Tracking Number Assignment for Application Number

VERY IMPORTANT – Download PureEdge Viewer
In order to download the application package, you will need to install PureEdge Viewer. This small, free program will allow you to access, complete, and submit applications electronically and securely. For a free version of the software, visit the following web site: http://www.grants.gov/DownloadViewer.

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Attachment A. Federal Assistance Reporting Checklist and Instructions

Reference Material

DOE Genomics: GTL. Systems Biology for Energy and Environment, Roadmap. http://doegenomestolife.org/roadmap

DOE Office of Science, 2003, Facilities for the Future of Science: A Twenty-Year Outlook. http://www.science.doe.gov/Sub/Facilities_for_future/facilities_future.htm

DOE Office of Biological and Environmental Research, 2003, Genomes to Life Facility Workshop report: GTL Facility for production and Characterization of Proteins and Molecular Tags, Chicago, Illinois, May 29–30, 2003. http://doegenomics.org/pubs/prod_protein_mol_tags_workshop_052903.pdf

DOE Office of Biological & Environmental Research, 2004, Genomes to Life: Realizing the Potential of the Genome Revolution. http://doegenomics.org/overview.pdf

PART I - FUNDING OPPORTUNITY DESCRIPTION

A. SUMMARY

The Genomics: GTL program (GTL) in the Office of Biological and Environmental Research (OBER) of the Office of Science (SC), U.S. Department of Energy (DOE), is a broad, microbe-based research program that will dramatically advance understanding of both individual microbes and complex microbial communities as whole living systems. To achieve this understanding, the scientific community needs access to resources that enable individual scientists to collect, access and analyze vast amounts of data that exceed the capabilities of their individual laboratories (see Genomics: GTL Roadmap at http://doegenomestolife.org/roadmap/index.shtml). This Funding Opportunity Announcement requests that the scientific community submit applications for the development of a scientific user facility for the Production and Characterization of Proteins and Molecular Tags that involves the design, construction (construction is used generically here and could include new construction, renovation of existing space, leasing space or other options proposed by the applicants), and research and development related to the design, configuration, and operation of the facility that will serve as a major scientific user facility for the scientific community including the Genomics: GTL program.

B. BACKGROUND

The mission of the Biological and Environmental Research (BER) program is to advance environmental and biomedical knowledge that promotes national security through improved energy production, development, and use; international scientific leadership that underpins our Nation's technological advances; and research that improves the quality of life for all Americans. As part of its mission to develop and support a national scientific infrastructure for our Nation's scientists, the BER program may plan, construct, operate and/or sponsor a wide array of traditional and nontraditional scientific user facilities that serve scientists at universities, national laboratories and in the private sector across a range of scientific disciplines from biology to the environmental remediation sciences to climate change research.

Our investment in genomics over the past 20 years now allows us to rapidly determine and interpret the complete DNA sequence of any organism. Because it reveals the blueprint for life, genomics is the launching point for an integrated and mechanistic systems understanding of biological function. It is a new link between biological research and the development of biotechnologies. With genomics data as a starting point, the Genomics: GTL program will use a systems biology approach to fundamentally transform the way scientists conduct biological investigations and describe living systems (see http://www.doegenomestolife.org/roadmap/ for a comprehensive description of the GTL program including its research, facilities, and links to DOE mission needs).

GTL's goal is simple in concept but complicated in practice to reveal how the static information in genome sequences drives the intricate and dynamic processes of life. Through predictive models of these life processes and supporting research infrastructure, we seek to harness the capabilities of microbes and complex microbial communities, that are the foundation of the biosphere and sustain all life on earth. Gaining reliable use of microbial processes requires understanding the whole living system, not just genomic DNA sequences or collections of proteins or cell by-products. GTL will study critical microbial properties and processes on three systems levels, i.e., molecular, cellular, and community, each requiring advances in fundamental capabilities and concepts.

Already, discoveries in the microbial world are changing our view of the origins, limits, and capabilities of life. Unique microbial biochemistries amassed over eons in every niche on the planet now offer a deep and virtually limitless resource that can be applied to help enable biobased solutions for national needs. GTL research will reveal processes by which microbes produce energy, including ethanol and hydrogen, and other capabilities that may be used to clean up environmental contaminants and control the cycling of carbon.

Elucidating the design principles of microbial systems in their diverse environments entails analyses of unprecedented scale and complexity. DOE-relevant microbial systems can have millions of genes and thousands of genetic and regulatory processes and community interactions that underlie diversity and adaptability. Achieving GTL goals requires a major advance in our ability to measure the phenomenology of living systems and to incorporate their operating principles into computational models and simulations that accurately represent biological systems the ultimate level of integrated understanding generated by GTL research.

To make GTL science and biological research more broadly tractable, timely, and affordable to our Nation's scientists, the GTL program will sponsor up to four user facilities that deliver economies of scale and enhanced performance currently unavailable to the scientific community. The facilities will provide the advanced technologies and state-of-the-art computing needed to better understand microbial genomic potential, cellular responses, regulation, and community behaviors in any environment. Making these resources available to the broad research and technology-development communities will democratize access to forefront scientific resources and enlist an expanded community in exciting science for national scientific research needs.

Central to the success of the GTL program are computing and information technologies, which will allow us to surmount the barrier of complexity now preventing us from deducing biological function directly from genome sequence. GTL will create an integrated computational environment that will link experimental data of unprecedented quantity and dimensionality with theory, modeling, and simulation to uncover fundamental biological principles and to develop and test systems theory for biology.

Although each of the four planned GTL facilities is technically distinct in nature of its instrumentation, methods, and overall goals, the facilities will share certain interdependencies including the sharing of all information through the GTL Knowledgebase and the program’s communication and computing infrastructure.

C. PURPOSE, OBJECTIVES, AND CONSTRUCTION REQUIREMENTS

Highly productive facilities are available that meet many biology research needs: for example, structural biology beamlines for determining the structures of important biomolecules and high-throughput DNA sequencing facilities for complete genomic sequencing. However, systems biology research will not become efficient, cost-effective, and accessible to large numbers of scientists until high throughput research user facilities meeting the specific needs of the discipline are made available to the scientific community. The GTL program therefore has developed plans for a series of four stand-alone but functionally integrated facilities with a phase-in period of 5-10 years. This set of integrated facilities will provide broad support to our Nation’s scientists for systems biology research including the development of biology based solutions to National energy and environmental needs in a cost effective and timely manner.

A comprehensive Roadmap for the Genomics: GTL program is now available, including a description of the Facility for Production and Characterization of Proteins and Molecular Tags and the other three GTL facilities (http://www.doegenomestolife.org/roadmap/).

The first GTL facility, the Facility for the Production and Characterization of Proteins and Molecular Tags, will surmount a principal roadblock to the whole-system analysis that is the foundation for the entire GTL program by implementing high-throughput production and characterization of microbial proteins.

Individual proteins encoded in the genome are the basic building blocks for biological functions that can be useful in DOE missions. But the challenge of understanding these workhorse molecules is huge. Experimental analysis has determined the functions of only a few thousand of the millions of proteins encoded by the collective genomes on this planet and that understanding is incomplete. The critical first step in benefiting from the revolution in biology created by the new knowledge of genomes is the creation of technical resources to synthesize, and characterize the function of, the thousands of proteins encoded by an organism's genome. The availability of this Facility to the scientific community will bring together, for the first time, comprehensive technologies to mass-produce and characterize microbial proteins directly from sequence data and to generate specific 'capture and labeling' affinity reagents for each protein. The availability of these characterized proteins and "tags" to capture, identify, and track them in living systems will provide a crucial resource for researchers. This will enable development of methods to determine how and under which condition these proteins and protein complexes function in cellular processes.

The development of this first Facility will require additional research to develop the core technologies that will underpin the capabilities of the Facility including the development of technologies for high-throughput production of proteins and their biophysical characterization, and for the production of molecular tags to identify individual proteins and to characterize multi-protein complexes in microbial cells. Production and characterization technologies should be scalable, economic, and sufficiently robust to work in a production environment. At least 50% of all proteins are anticipated to pose significant problems for any current production method. Consequently, a significant component of this project will be research into new methods of protein production. Improved techniques are also needed to predict from genome sequence what production and purification approaches are most likely to succeed with each protein. Thus, informatics also is an integral component. Algorithms based on data from successful and failed protein expressions are expected to substantially inform and improve future protein production efficiency.

The Facility will produce, characterize, and make available a wide range of microbial proteins from both cultivated and uncultivated microbes for use by the scientific community in their individual research projects. Ready availability of these resources will free the nation's scientists to apply their energies to understanding these microbes, a major step toward using microbial capabilities.

A preliminary description of this Facility, developed with broad input from the scientific community is available in the GTL Roadmap (http://www.doegenomestolife.org/roadmap/). The Facility will house core facilities for protein production and characterization, offices for staff, students, visitors, and administrative support as well as conference rooms and other common space necessary

to ensure its mission. This high-throughput facility will have extensive robotics for efficient sample processing, suites of highly integrated analytical instruments for sample analysis, and large suites of highly parallelized sample preparation equipment needed for preparing large numbers of different DNA molecules, proteins, protein tags, and variants of normal proteins. Included will be laboratories and instrumentation for: production of proteins from any biological source; production of protein variants (e.g., isotopically labeled proteins, post-translationally modified proteins, proteins with unknown co-factors, proteins incorporating non-standard amino acids, site-specific mutant arrays [high-throughput mutagenesis]); production of multiple affinity reagents (e.g., antibody domains) for each protein; and production of membrane proteins and multi-protein complexes. Included will be all the equipment necessary to support the mission of the proposed facility.

The Facility will be a user facility that integrates the necessary basic research, technology and automation to enable (1) the production and characterization of all proteins expressed by a genome and (2) the generation of affinity reagents to each protein for identifying, tracking, quantifying, controlling, capturing, and imaging individual proteins and molecular machines in living systems. The primary focus of the Facility will be on microbial species being studied by scientists because of their potential use in bio-energy production, biology-based clean up of environmental contaminants and biology-mediated sequestration of atmospheric carbon dioxide though it will have broad relevance and value to all scientists conducting fundamental research to understand whole living systems. Over the ten years after the facility begins operation, the goal is to produce up to 250,000 proteins in milligram quantities; up to 1 million molecular tags for those proteins; and carry out multiple biophysical characterizations of each, beginning with an organism's genomic sequence.

The design, construction, and operation of the Facility will be unique and aspects of the design may be used in the design and building of other similar facilities. Therefore, DOE intends to retain ownership of the Intellectual Property (IP) rights regarding the design and operation of the facility, including IP incorporated in the facility so that, for example, if the awardee for the Facility is changed, the operation of the Facility will be unaffected. Furthermore, DOE may wish to share the design with entities in other countries.

While the primary product of the user facility will be the proteins and molecular tags, the protocols for their production and information on failures as well as successes in production of specific proteins and tags will also be of high value to the community served by the Facility, and indeed the entire international biological research community. The institution hosting the Facility will therefore be expected to make all such information freely available on the internet, and wherever appropriate, to deposit such data into community curated databases (such as Target DB managed by the Research Collaboratory for Structural Bioinformatics [http://targetdb.pdb.org/]). The DOE will approve the terms and conditions of the IP rights contained in facility user agreements.

The Awardee may commercialize its IP (e.g., inventions and software) developed under the award during the term of the award, subject to the above requirement to freely release protocols, production data, and product characteristics to the scientific community. The Awardee will be allowed to charge overhead for its technology transfer expenses. In exchange for being allowed to charge overhead, the Awardee will agree to certain conditions, such as U.S. competitiveness and fairness of opportunity for commercialization of IP. Use of overhead funds for technology transfer is not required.

While DOE would prefer that the awardee use overhead funds for technology transfer, DOE is prepared to consider proposals to establish privately-funded technology transfer programs in lieu of using overhead funds.

Strategies for development of this facility may include, but are not limited to, renovation of existing buildings, leasing buildings, and new building construction using federal funds. Costs for Project Engineering and Design are estimated at up to $9.92 million. Based on the current project scope definition, the estimated range of construction costs is approximately $120M - $170M. Research and development costs related to facility design and configuration are estimated to be up to $20M. The range of facility operation research and development estimated costs is approximately $90M-$120M. Construction is anticipated to begin in 1st Quarter of FY 2008 (i.e., between October and December of CY 2007) and facility operation is anticipated to begin in the 1st Quarter of FY 2011 (i.e., between October and December of CY 2010) and continue for a three-year period.

D. RESEARCH IN SUPPORT OF FACILITY DEVELOPMENT

A broad range of research is needed to underpin the scientific and technology challenges of the Facility. These span the range of capabilities of the Facility including protein production and development of molecular tags for proteins. A detailed discussion of the research needs associated with the development of this Facility can be found in the GTL Roadmap Chapter 5.1 (see http://www.doegenomestolife.org/roadmap/).

PART II – AWARD INFORMATION

A. TYPE OF AWARD INSTRUMENT.

DOE anticipates awarding either a field-work proposal or a cooperative agreement under this Funding Opportunity Announcement. A DOE field work proposal will be awarded to a successful DOE/NNSA Federally Funded Research and Development Center (FFRDC) contractor. A cooperative agreement will be awarded to any other successful entity including, but not limited to, universities and for-profit corporations.

B. ESTIMATED FUNDING. Approximately $240,000,000.00 is expected to be available for a new award under this announcement. Total estimated DOE funding available for the project is as follows:

Phases	**Anticipated DOE Funding**
Phase I. Site Specific Conceptual Design	Fiscal Year (FY) 2006: Up to $1 million, 4-6 months
Phase II: Project Engineering and Design	FY 2006: Up to $9.92 million, 12-18 months
Phase III: Construction	FY 2008-2010: Approximately $120 - $170 million for up to 36 months
Facility-related research and development costs applicable to Phases I , II, and III	FY 2006-2010: Up to $20 million
Phase IV: Facility Operation	FY 2010-2013: Approximately $90-$120 million for 36 months

C. MAXIMUM AND MINIMUM AWARD SIZE.

Ceiling (i.e., the maximum amount for an individual award made under this announcement): $321,000,000.00.

Floor (i.e., the minimum amount for an individual award made under this announcement): $ None

D. EXPECTED NUMBER OF AWARDS.

DOE anticipates making __1___ award under this announcement.

E. ANTICIPATED AWARD SIZE.

DOE anticipates that a single award will be in the $241,000,000.00 to $321,000,000.00 range for the total project period.

F. PERIOD OF PERFORMANCE.

DOE anticipates making a single award with a project period duration of eight years.

PART III - ELIGIBILITY INFORMATION

A. ELIGIBLE APPLICANTS.

All types of domestic applicants, including DOE/NNSA FFRDC Contractors, are eligible to apply, except other Federal agencies and their FFRDC contractors, and nonprofit organizations described in section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995.

B. COST SHARING.

Cost sharing is not required.

C. OTHER ELIGIBILITY REQUIREMENTS.

DOE/NNSA Federally Funded Research and Development Center (FFRDC) Contractors.

DOE/NNSA FFRDC applicants are eligible for an award under this announcement as a prime awardee or as a team member subject to the following guidelines:

Authorization for DOE/NNSA FFRDCs. The cognizant Contracting Officer for the FFRDC must authorize in writing the use of a DOE/NNSA FFRDC contractor on the proposed project and this authorization must be submitted with the application. The following wording is acceptable for this authorization.

> "Authorization is granted for the _____ Laboratory to participate in the proposed project. The work proposed for the laboratory is consistent with or complementary to the missions of the laboratory, and will not adversely impact execution of the DOE/NNSA assigned programs at the laboratory."

Value/Funding. If the DOE/NNSA FFRDC contractor is proposed as a team member for a non-FFRDC awardee, the value of, and funding for, the DOE/NNSA FFRDC contractor portion of the work will not normally be included in the award to a successful applicant. Usually, DOE/NNSA will fund a DOE/NNSA FFRDC contractor through the DOE field work proposal system whether the DOE/NNSA FFRDC is the prime awardee or a proposed team member.

Responsibility. The applicant, if successful, will be the responsible authority regarding the settlement and satisfaction of all contractual and administrative issues, including but not limited to, disputes and claims arising out of any agreement between the applicant and the DOE/NNSA FFRDC contractor if the latter is a team member.

Program and Project Management for the Acquisition of Capital Assets - DOE O 413.3.
DOE anticipates awarding either a field-work proposal or a cooperative agreement under this Funding Opportunity Announcement. A DOE field work proposal will be awarded to a successful DOE/NNSA Federally Funded Research and Development Center (FFRDC) contractor. If the successful applicant is a DOE/NNSA FFRDC or a DOE/NNSA FFRDC is a team member, the FFRDC will be required to comply with the project management requirements provided in DOE Order 413.3 and DOE Manual 413.3-1. If the successful applicant is not a DOE/NNSA FFRDC, the applicant will need to comply with state-of-the-art

project management systems and practices which will be negotiated as part of the development of a cooperative agreement.

PART IV – APPLICATION AND SUBMISSION INFORMATION

A. ADDRESS TO REQUEST APPLICATION PACKAGE.

Application forms and instructions are available at Grants.gov. To access these materials, go to http://www.grants.gov, select "Apply for Grants," and then select "Download Application Package." Enter the CFDA and/or the funding opportunity number located on the cover of this announcement and then follow the prompts to download the application package. NOTE: You will not be able to download the Application Package unless you have installed PureEdge Viewer (See: http://www.grants.gov/DownloadViewer).

B. LETTER OF INTENT AND PRE-APPLICATION.

1. Letter of Intent.

Applicants are requested to submit a letter of intent by Tuesday, January 31, 2006. This letter should include the name of the applicant, the title of the project, the name and e-mail address of the Project Director/Principal Investigator(s) and a one-page abstract. The letters of intent will be used to determine the estimated number of applications that will be received. Failure to submit such letters will not negatively effect a responsive application submitted in a timely fashion. The letter of intent should be sent by E-mail to Ms. Joanne Corcoran at: joanne.corcoran@science.doe.gov and Dr. David Thomassen at: david.thomassen@science.doe.gov.

2. Pre-application.

Pre-applications are not required.

3. Funding Opportunity Announcement Conference.

A telephone conference for applicants will be held on Wednesday, February 22 , 2006, at which time questions about the contents of ~~offers~~ applications will be answered. The meeting will begin at approximately 1:00 pm Eastern Standard Time and will run for up to three hours. Each institution that has submitted a letter of intent should arrange for a sufficient number of staff members to participate in this meeting to cover the following areas of discussion: protein production technology; protein characterization technology; informatics; quality assurance; procurement; Environmental, Safety, and Health issues. The lead contact person for each application should also participate. Specific questions for discussion during the telephone conference may be sent in advance of the meeting to Roland F. Hirsch (roland.hirsch@science.doe.gov) with copies to Marcus Jones (marc.jones@science.doe.gov) ~~and David Thomassen (david.thomassen@science.doe.gov)~~ by close of business February 15, 2006. Instructions for participation will be provided via e-mail to the Project Director/Principal Investigator identified in the Letter of Intent or can be requested from Dr. Hirsch by close of business February 15, 2006.

C. CONTENT AND FORM OF APPLICATION – SF 424.

You must complete the mandatory forms and any applicable optional forms (e.g., SF-LLL-Disclosure of Lobbying Activities) in accordance with the instructions on the forms and the

additional instructions below. **Files that are attached to the forms must be in Adobe Portable Document Format (PDF) unless otherwise specified in this announcement**.

1. SF 424 - Application for Federal Assistance.

Complete this form first to populate data in other forms. Complete all required fields in accordance with the pop-up instructions on the form. To activate the instructions, turn on the "Help Mode" (Icon with the pointer and question mark at the top of the form).

2. Other Attachments Form.

Submit the following files with your application and attach them to the Other Attachments Form. Click on "Add Mandatory Other Attachment" to attach the Project Narrative. Click on "Add Optional Other Attachment," to attach the other files.

Project Narrative File - Mandatory Other Attachment.

The ten sections of the project narrative indicated by Roman numerals (see below for detailed contents) must not exceed ___120___ pages, including charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard 8.5" by 11" paper with 1 inch margins (top, bottom, left, and right). In addition to the contents of the Budget File, EVALUATORS WILL REVIEW ONLY THE NUMBER OF PROJECT NARRATIVE PAGES SPECIFIED IN THE PRECEDING SENTENCE. The font must not be smaller than 11 point. Do not include any Internet addresses (URLs) that provide information necessary to review the application. See Part VIII.D. for instructions on how to mark proprietary application information. Save the information in a single file named "Project.pdf," and click on "Add Mandatory Other Attachment" to attach.

The contents of the project narrative are specified in order to ensure that the merit reviewers have the necessary information to conduct proper evaluations. All project narratives are to use the following outline.

I. Overview of the Project Plan (up to 20 pages)

- This section should provide a clear, substantive overview of the project plan and how the components will be integrated.

II. Protein and Tag Production and Characterization Strategy and Plan. Applicants should provide information on their strategies and plans for:

- Management as a production user facility;
- Approaches to the selection and prioritization of targets for protein and affinity tag production, based upon Genomics:GTL programmatic and community needs;
- Technologies for high-throughput production of proteins;
- Production of reagents (e.g., affinity tags);
- Process flow for isolation and purification of products including techniques for characterization of product proteins and reagents, and organization of space allocated to production and characterization activities;
- Strategies to overcome key scientific and technical challenges to ensure success of the project; and

- Other issues related to protein and tag production and characterization, if any.

III. Research and Development Strategy and Plan. Applicants should provide information on their strategies and plans for:

- Management of research and development activities of the facility including research into high-throughput production of proteins and tags;
- Development of new techniques for characterization of products;
- Integration of production and characterization technologies developed in collaboration with external sources;
- Organization of space allocated to research and development activities; and
- Other issues related to research and development activities, if any.

IV. Quality Assurance Plan. Applicants should provide information on their plans for:

- Overall Quality Assurance/Quality Control (QA/QC) plan for proteins and reagents/tags;
- Qualification for International Organization for Standardization (ISO) Quality Management Systems Requirements (9001-2000) and Environmental Management Standards (14000);
- Implementation of Good Manufacturing Practice (GMP) and Good Laboratory Practice (GLP) (or an alternative);
- Use of Six Sigma or similar concepts for controlling quality of products;
- Procedures for ensuring reliability of information available to the user community for each protein and reagent/tag; and
- Other issues related to quality assurance, if any.

V. Informatics Plan. Applicants should provide information on their plans for:

- Plans for linking community requests and target selection;
- Laboratory Information Management System (LIMS);
- Public access to data on proteins and reagents/tags in production and proteins and reagents/tags already available, including characterization and QA/QC data and protocols;
- Linking with external databases; and
- Other issues related to informatics, if any.

VI. External Collaborations and Partnerships Plan. Applicants should provide information on their plans for:

- Those aspects of facility development and operation that will depend on collaboration with external organizations;
- Outstations to be established by the facility, if any (e.g., at synchrotrons, neutron facilities, etc.); and
- Procedures for selecting collaborating institutions.

VII. Environment, Safety and Health (ES&H) and Security Approaches. Applicants should provide information on:

- The approach for assuring environmental compliance during construction and research and development activities;
- Anticipated environmental permit requirements for proposed facility, and proposed schedule for compliance with those requirements;
- The approach to identifications and mitigation of Worker Safety and Health risks during construction and operation of the facility;
- The ES&H compliance history of the applicant over the last five years (e.g. EPA and state environmental notices of violation, OSHA citations, status of any resulting action plans);
- Approaches for assuring security of access to the facility and to its inventory of equipment and products;
- Their user access program, including how applicant will provide access (either physical or cyber) to the broad international research community to the work done at the facility, while maintaining necessary levels of facility and cyber security;
- Potential impacts on any "environmentally sensitive resources", including property with historic, archeological, or architectural significance; state or federal listed or proposed threatened or endangered species or their habitat; wetlands; specially designated wild, refuge, or park lands; prime agricultural lands; special sources of water; and tundra, coral reefs or rain forests. For further information, refer to section IV.A. of the Instructions located at pp. 4-8 of http://www.ch.doe.gov/offices/ACQ/docs/ [Please Note: Federal laws and regulations impose a number of procedural requirements on Federal agencies whose actions (including funding) could have an effect on sensitive resources. The National Environmental Policy Act (NEPA), is only one of these. These processes will need to be completed prior to commencement of any action that could have an effect on the environment or limit alternatives (e.g., completion of the final/detailed design). The Environmental Evaluation Notification Form and instructions published at the web site provided above provide information concerning the type of information the successful applicant will need to provide the Government to initiate these processes. Please note that the Environmental Evaluation Notification Form does not need to be submitted as part of the application, but rather will need to be completed by the successful applicant prior to the initiation of these processes.]

VIII. Integration with Genomics: GTL Program and with Future Genomics: GTL Facilities. Applicants should provide information on:

- How the proposed facility relates to the broader Genomics: GTL program focusing on unique or beneficial aspects of the proposed facility design, research & development or operating plan; and
- How the facility and its management team will integrate with future GTL facilities whose sites and management teams have yet to be identified. There is no need to repeat information already outlined in the GTL Roadmap.

IX. Institutional Context. Applicants should provide information on:

- How the proposed facility relates to existing and planned research programs and to other facilities at the host institution;

- How different components of the facility will be coordinated if not co-located; planned programs for education, outreach and training in the facility's science and technology; and
- Other issues related to the institutional context, if any.

X. Organization and Staffing Plan. Applicants should provide information on:

- Existing Staff, and their experience in designing, constructing, managing, and operating major scientific user facilities;
- Scientific/Technical experience in two-page Curriculum Vitae (CV) for no more than eight key personnel (i.e., any individual who contributes in a substantive, measurable way to the execution of the project);
- Availability of these key personnel, including analysis of their potential involvement in other major projects;
- Major needs and recruiting strategy for new senior staff;
- Organizational structure: roles and responsibilities of key personnel;
- Ability to integrate design, construction, instrumentation and research components of program;
- Description of proposed project management systems and practices including systems and plans for project scope definition, cost estimation, schedule development and execution, risk identification and management, and performance monitoring (e.g., earned value management system); and
- Other issues related to organization and staffing, if any.

ADDITIONAL MATERIAL (not included in Project Narrative page limits above)

Attach the (1) Facility Siting, Acquisition, Design and Development Plan, (2) Funding Plan, (3) Project Timetable, and (4) Letters of Commitment from Key Personnel and Team Members, as described below, in a self-contained document that clearly identifies each of the four separate documentation requirements. Save this information in a single file named "AddMaterial.pdf" and click on "Add Optional Other Attachment" to attach.

- Facility Siting, Acquisition, Design and Development Plan

  Discuss facility siting alternatives, considerations and recommendations. It is envisioned that the proposed facility could be newly constructed, renovated facilities or some combination. The proposal should describe the proposed facility size, conceptual layout, and development strategy (including summary-level scope, schedule and cost estimates) to house and support the research and support activities identified in this solicitation. The facility should include offices for technical staff, users, and administrative staff and conference rooms and other common space needed to create a working space that promotes effective collaboration.

- Funding Plan

  Discuss strategy for development of funding for facility, including but not limited to, cost sharing and DOE funding.

- Project Timetable

  This section should outline as a function of time, year by year, all the major activities or phases of the project. The successful applicant must use this project timetable to report progress. A more detailed timetable for each phase will be developed by the successful applicant during the preceding phase for the duration of the project.

- Letters of Commitment from Key Personnel and Team Members

  Letters of commitment signed by key personnel for no more than eight key personnel should be included in this section. In addition, letters of commitment are required from each organization participating as a team member. Letters of commitment from organizations participating as team members must be signed by the person authorized to commit the organization to a legally binding agreement. Each letter of commitment is limited to one page.

Project Summary/Abstract File.

The project summary/abstract must contain a summary of the proposed activity suitable for dissemination to the public. It should be a self-contained document that identifies the name of the applicant, the project director/principal investigator(s), the project title, the objectives of the project, a description of the project, including methods to be employed, the potential impact of the project (i.e., benefits, outcomes), and major participants (for collaborative projects). This document must not include any proprietary or sensitive business information as the Department may make it available to the public. The project summary must not exceed 1 page when printed using standard 8.5" by 11" paper with 1" margins (top, bottom, left and right) with font not smaller than 11 point. Save this information in a file named "Summary.pdf," and click on "Add Optional Other Attachment" to attach.

SF424A Excel, Budget Information – Non-Construction Programs File for Phase I, Site Specific Conceptual Design

Phase I cost estimates shall be for preparation of a more detailed Site-Specific Conceptual Design Report based on the facility conceptual design described in the application. Research and Development costs may also be included. The detailed budget for Phase I, Site Specific Conceptual Design, is required to be submitted with your application using the SF 424A Excel, "Budget Information – Non Construction Programs" form on the Applicant and Recipient page at http://grants.pr.doe.gov. You may request funds under any of the Object Class Categories as long as the item and amount are necessary to perform the proposed work, meet all the criteria for allowability under the applicable Federal cost principles, and are not prohibited by the funding restrictions in this announcement (See Part IV, G). Annotate the budget is for Phase I. Save the information in a single file named "SF424APhI.xls" and click on "Add Optional Other Attachment" to attach.

Budget Justification File for Phase I, Site Specific Conceptual Design

You must justify the costs proposed in each Object Class Category/Cost Classification category (e.g., identify key persons and personnel categories and the estimated costs

for each person or category; provide a list of equipment and cost of each item; identify proposed subaward/consultant work and cost of each subaward/consultant; describe purpose of proposed travel, number of travelers and number of travel days; list general categories of supplies and amount for each category; and provide any other information you wish to support your budget). Provide the name of your cognizant/oversight agency, if you have one, and the name and phone number of the individual responsible for negotiating your indirect rates. If cost sharing is proposed, provide an explanation of the source, nature, amount and availability of any proposed cost sharing. Annotate the Budget Justification is for Phase I. Save this information in a single file named BudgetPhI.pdf" and click on "Add Optional Other Attachment" to attach.

Subaward Budget File(s) for Phase I, Site Specific Conceptual Design

You must provide a separate budget for each subawardee that is expected to perform work estimated to be more than $100,000 or 50 percent of the total work effort (whichever is less) for Phase I, Site Specific Conceptual Design. Use the SF 424 A Excel for Non-Construction Programs. These forms are found on the Applicant and Recipient Page at http://grants.pr.doe.gov. Annotate the budget is for Phase I and save each Subaward budget in a separate file. Use up to 7 letters of the subawardee's name and "PhI" (plus.xls) as the file name (e.g. uclaPh1.xls or energyrPhI.xls).

Budget for DOE/NNSA Federally Funded Research and Development Center (FFRDC) Contractor, if applicable, for Phase I, Site Specific Conceptual Design

If a DOE/NNSA FFRDC contractor is to perform any portion of the work, you must provide a DOE Field Work Proposal in accordance with the requirements in DOE Order 412.1A, Work Authorization System. This order and the DOE Field Work Proposal form are available at http://grants.pr.doe.gov. Submit a separate DOE Field Work Proposal form for Phase I, Site Specific Conceptual Design, and save the information in a single file. Annotate the budget is for Phase I. Use up to 7 letters of the FFRDC name and "PhI" (plus.pdf) as the file name (e.g., lanlPhI.pdf or anlPhI.pdf). This information is required in addition to the budgetary information described above for Phase I (SF 424A Excel - Budget Information for Non-Construction Programs, Budget Explanation File, and Subaward Budget File).

Project Summary Budget File for Phase II, Project Engineering and Design, Phase III, Construction, and Phase IV, Facility Operation

For Phases II, III, and IV, applicants shall provide preliminary estimates of cost ranges and the bases from which those estimates were developed, for example, on parametrics or analogy. These estimates should be provided in sufficient detail to understand the bases used including a summary level understanding of the potential project risks anticipated by the applicant. However, we are not requesting nor do we expect detailed budgets for Phases II, III, and IV with the application submission. Estimated costs shall be summarized as follows, using the applicants own format:

Phase II – Phase II cost estimates shall be for project engineering and design sufficient to develop a project's performance baseline (scope, schedule and cost) that serves as a

basis for measuring project performance and for requesting the funds needed to procure or construct a capital asset. Costs associated with a Research and Development program, support of the NEPA process, and other Applicant-defined cost estimates may also be included.

Phase III - Phase III cost estimates shall be segregated into the following categories: Research and Development program, Construction (including cost of renovation of existing and/or leased space), Pre-operating, and other Applicant-defined cost estimates.

Phase IV - Phase IV cost estimates shall address the operation and maintenance of the first GTL facility including the establishment and management of a robust, peer-reviewed user program that is both responsive to the needs of users and to emerging technologies. This user facility will include opportunities for user collaboration with facility scientific leads, an R&D program for facility capability enhancement, a responsive quality assurance program, and infrastructure support including computer and network support, machine shop access, waste management costs, and ES&H support. The core facility will include instrumentation for gene synthesis and manipulation techniques, high-throughput microtechnologies for protein-production screening, robotic systems for protein and affinity-reagent production and characterization, and computing for data capture and management, genomic comparative analyses, control of high-throughput system and robotics, and production-strategy determination.

If cost sharing is proposed, provide an explanation of the source, nature, amount and availability of any proposed cost sharing. Save this information in a single file named "ProjBudget.pdf," and click on "Add Optional Other Attachment" to attach.

After selection and prior to award, submission of the SF 424 A Excel, Budget Information – Non-Construction Programs form and budget justification for Phase II, Project Engineering and Design, will be required (See Part IV.D.). Submission instructions for budget information for Phases III and IV will be provided prior to the initiation of each phase of the project.

Certifications and Assurances for Use with SF 424, Version 2 File.

You must complete and provide the "Certifications and Assurances for Use with SF 424, Version 2" form on the Applicant and Recipient Page at http://grants.pr.doe.gov. Submission of an electronic application through Grants.gov constitutes the submission of a signed document. Type the name of the person reponsible for providing the certifications and assurances in the signature block and save as a pdf file. Do not submit a scanned copy of the form. Name the file "Certs.pdf," and click on "Add Optional Other Attachment" to attach.

Commitment Letters from Third Parties Contributing to Cost Sharing.

If a third party, (i.e., a party other than the organization submitting the application) proposes to provide all or part of any proposed cost sharing, you must provide a letter from the third party stating that it is committed to providing a specific minimum dollar amount of cost sharing. The letter should also identify the proposed cost sharing (e.g., cash, services, and/or property) to be contributed. Letters must be signed by the person

authorized to commit the expenditure of funds by the entity. Provide this information in a single file named “CLTP.pdf” and click on “Add Optional Other Attachment” to attach.

3. SF-LLL Disclosure of Lobbying Activities.

If applicable, complete SF- LLL. Applicability: If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the grant/cooperative agreement, you must complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying.”

Summary of Required Forms/Files

Your application must include the following documents:

Name of Document	Format	File Name
SF 424 - Application for Federal Assistance	PureEdge Form	N/A
Other Attachments Form: Attach the following files to this form:	PureEdge Form	N/A
Project Narrative File	PDF	Project.pdf
Additional Material File	PDF	AddMaterial.pdf
Project Summary/Abstract File	PDF	Summary.pdf
SF424A Excel, Budget Information – Non-Construction Programs File for Phase I, Site Specific Conceptual Design	Excel	SF424APhI.xls
Budget Justification File for Phase I, Site Specific Conceptual Design	PDF	BudgetPhI.pdf
Subaward Budget File(s) for Phase I, Site Specific Conceptual Design	Excel	See Instructions
Budget for DOE/NNSA Federally Funded Research and Development Center (FFRDC) Contractor, if applicable, for Phase I, Site Specific Conceptual Design	PDF	See Instructions
Project Summary Budget File for Phase II, Project Engineering and Design, Phase III, Construction, and Phase IV, Facility Operation	PDF	ProjBudget.pdf

Certifications and Assurances for Use with SF 424 File	PDF	Certs.pdf
Commitment Letters from Third Parties Contributing to Cost Sharing File, if applicable.	PDF	CLTP.pdf
SF-LLL Disclosure of Lobbying Activities, if applicable.	PureEdge Form	N/A

D. SUBMISSION FROM SUCCESSFUL APPLICANT.

The successful applicant must submit the information listed below not later than _30___ calendar days after notification of selection with the exception of the first three items listed below which are due 15 calendar days after notification of selection. Applicants who fail to provide the information within the required time period may be eliminated from further consideration. Furthermore, DOE reserves the right to request additional or clarifying information from the successful applicant for any reason deemed necessary.

What to submit	Required Form or Format
Designated Responsible Employee for complying with national policies prohibiting discrimination. Provide organization name, project title, DOE application tracking number and the name, title, and phone number of Designated Responsible Employee for complying with national policies prohibiting discrimination (See 10 CFR 1040.5).	No special format. E-mail information not later than 15 calendar days after selection to: vicki.phillips@ch.doe.gov
Representation of Limited Rights Data and Restricted Software	Use form on Applicant and Recipient Page at http://grants.pr.doe.gov. E-mail this representation not later than 15 calendar days after selection to vicki.phillips@ch.doe.gov
Environmental Evaluation Notification Form. You must complete and submit this environmental questionnaire. NOTE: The NEPA process must be completed prior to commencement of the final/detailed design.	This form and instructions are available at http://www.ch.doe.gov/offices/ACQ/docs/ E-mail the completed Environmental Evaluation Notification form not later than 15 calendar days after selection to Vicki.phillips@ch.doe.gov
SF 424A Excel – Budget Information for Non-Construction Programs, Budget for Phase II, Project Engineering and Design You must provide a separate budget for Phase II, Project Engineering and Design, using the SF 424 A Excel, "Budget Information – Non Construction Programs" form on the Applicant and Recipient page at http://grants.pr.doe.gov. Annotate the budget is for Phase II. You may request funds under any of the Object Class Categories as long as the item and amount are necessary to perform the proposed work, meet all the criteria for allowability under the applicable Federal cost principles, and are not prohibited by the funding restrictions in this announcement (See Part IV, G). Save the information in a single file named "SF424APh2.xls."	E-mail the completed budget forms to vicki.phillips@ch.doe.gov
Budget Explanation File for Phase II, Project Engineering and Design You must justify the costs proposed in each Object	E-mail file to vicki.phillips@ch.doe.gov

Class Category/Cost Classification category (e.g., identify key persons and personnel categories and the estimated costs for each person or category; provide a list of equipment and cost of each item; identify proposed subaward/consultant work and cost of each subaward/consultant; describe purpose of proposed travel, number of travelers and number of travel days; list general categories of supplies and amount for each category; and provide any other information you wish to support your budget). Provide the name of your cognizant/oversight agency, if you have one, and the name and phone number of the individual responsible for negotiating your indirect rates. If cost sharing is proposed, provide an explanation of the source, nature, amount and availability of any proposed cost sharing. Annotate the budget explanation is for Phase II and save this information in a single file named "BdgtExpPh2.pdf."	
Subaward Budget File(s) for Phase II, Project Engineering and Design You must provide a separate budget for each subawardee that is expected to perform work estimated to be more than $100,000 or 50 percent of the total work effort (whichever is less) for Phase II, Project Engineering and Design. Use the SF 424 A Excel for Non-Construction Programs. These forms are found on the Applicant and Recipient Page at http://grants.pr.doe.gov. Annotate the budget is for Phase II and save each Subaward budget in a separate file. Use up to 7 letters of the subawardee's name plus "Ph2" (plus.xls) as the file name (e.g. uclaPh2.xls or energyrPh2.xls).	E-mail file to vicki.phillips@ch.doe.gov
Budget for DOE/NNSA Federally Funded Research and Development Center (FFRDC) Contractor, if applicable, for Phase II, Project Engineering and Design If a DOE/NNSA FFRDC contractor is to perform any portion of the work, you must provide a DOE Field Work Proposal in accordance with the requirements in DOE Order 412.1A, Work Authorization System. This order and the DOE Field Work Proposal form are available at http://grants.pr.doe.gov. Submit a separate DOE Field Work Proposal form for Phase II, Project Engineering and Design. Annotate the budget is for Phase II and save the information in a	E-mail file to vicki.phillips@ch.doe.gov

single file. Use up to 7 letters of the FFRDC name plus "Ph2" (plus.pdf) as the file name (e.g., lanlPh2.pdf or anlPh2.pdf). This information is required in addition to the budgetary information described above for Phase II (SF 424A Excel - Budget Information for Non-Construction Programs, Budget Explanation File, and Subaward Budget File).	

E. SUBMISSION DATES AND TIMES.

1. Pre-application Due Date. Pre-applications are not required.

2. Application Due Date.

Applications must be received by Tuesday, April 11 , 2006, not later than 8:00 PM Eastern Time. You are encouraged to transmit your application before the deadline. APPLICATIONS RECEIVED AFTER THE DEADLINE WILL NOT BE REVIEWED OR CONSIDERED FOR AWARD.

F. INTERGOVERNMENTAL REVIEW.

This program is not subject to Executive Order 12372 – Intergovernmental Review of Federal Programs.

G. FUNDING RESTRICTIONS.

Cost Principles**.** Costs must be allowable in accordance with the applicable Federal cost principles referenced in 10 CFR Part 600.

Pre-award Costs**.** Recipients other than DOE/NNSA FFRDC's may charge to an award resulting from this announcement pre-award costs that were incurred within the ninety (90) calendar day period immediately preceding the effective date of the award, if the costs are allowable in accordance with the applicable Federal cost principles referenced in 10 CFR part 600. Recipients must obtain the prior approval of the Contracting Officer for any pre-award costs that are for periods greater than this 90-day calendar period.

Pre-award costs are incurred at the applicant's risk. DOE is under no obligation to reimburse such costs if for any reason the applicant does not receive an award or if the award is made for a lesser amount than the applicant expected.

H. OTHER SUBMISSION AND REGISTRATION REQUIREMENTS.

1. Where to Submit.

APPLICATIONS MUST BE SUBMITTED THROUGH GRANTS.GOV TO BE CONSIDERED FOR AWARD. Submit electronic applications through the "Apply for Grants" function at www.Grants.gov. If you have problems completing the registration process or submitting your application, call Grants.gov at 1-800-518-4726 or send an email to support@grants.gov.

2. Registration Process.

- You must COMPLETE the one-time registration process (all steps) before you can submit your first application through Grants.gov (See www.grants.gov/GetStarted). **We recommend that you start this process at least two weeks before the application due date**. It may take 14 days or more to complete the entire process. Use the Grants.gov Organizational Registration Checklists at http://www.grants.gov/assets/OrganizationRegCheck.doc to guide you through the process. IMPORTANT: During the CCR registration process, you will be asked to designate an E-Business Point of Contact (EBIZ POC). The EBIZ POC must obtain a special password called "Marketing Partner identification Number" (MPIN).

Part V - APPLICATION REVIEW INFORMATION

A. CRITERIA.

1. Initial Review Criteria.
Prior to a comprehensive merit evaluation, DOE will perform an initial review in accordance with 10 CFR 605.10(b).

2. Merit Review Criteria.

Applications will be evaluated by a Merit Review Panel using the criteria listed below. Following completion of the merit review, a team comprised of Federal officials will review the applications and the Merit Review Panel evaluations, summarize their independent evaluations of, and recommendations regarding, the applications submitted of the merit reviewers, and recommend the application of the program policy factors, as appropriate.

Applications will be subjected to formal merit review and will be evaluated against the following criteria, which are listed in descending order of importance as set forth in 10 CFR Part 605. (http://www.science.doe.gov/grants/605index.html). Included within each criterion are the detailed questions that reviewers should consider.

a. Scientific and/or technical merit of the project;

- Will the proposed strategy lead to the development of a high-throughput user facility for the production and characterization of proteins and molecular tags for the scientific and Genomic: GTL communities?
- What is the likelihood that the applicants will overcome key scientific and technical challenges needed for success of the project?

b. Appropriateness of the proposed method or approach;

- Is the strategy and plan for protein and tag production and characterization scientifically and technically appropriate?
- Is the strategy and plan for research and development scientifically and technically appropriate for enhancing the capabilities of the facility and improving its success?
- Are the plans for external collaborations and partnerships, and for making the facility available as a user facility to university, industry, and government laboratory scientists reasonable and appropriate?
- Are the plans for quality assurance at the facility robust and appropriate? Do they add value to facility operations and products?
- Is the overall plan for informatics robust, scalable and appropriate for the mission of the facility and the needs of the scientific community?

c. Competency of the applicant's personnel and adequacy of the proposed resources;

- Does the applicant’s team have a robust track record of research and development in the areas needed for success in this project?
- Will the applicant be able to design, construct, manage, and operate a major facility project, ensuring that the project will be completed within budget and on schedule for

the performance specified for the Facility as supported by the proposed project management systems and practices?

- Is the Staff and Organization Plan, including plans for recruiting the additional scientific and technical personnel who will be involved in the project, reasonable and appropriate?
- Overall institutional context, including the relationship of the proposed facility to existing and planned research programs and to other facilities at the institution, and quality of plans for education, outreach and training in the facility's science and technology.

d. Environment, safety and health and security considerations, as follows:

- The adequacy and appropriateness of the ES&H approach for handling environmental, safety and health issues for a project of this magnitude.
- The applicant's history of compliance with ES&H requirements.
- The adequacy of the applicant's plan to identify and mitigate Worker Safety and Health risks during construction and operation of the facility;
- Approach for assuring security of access to the facility and to its inventory of equipment and products;
- The adequacy of the applicant's user access program, including how applicant will provide access (either physical or cyber) to the broad international research community to the work done at the facility, while maintaining necessary levels of facility and cyber security;
- Potential impacts on any "environmentally sensitive resources", including property with historic, archeological, or architectural significance; state or federal listed or proposed threatened or endangered species or their habitat; wetlands; specially designated wild, refuge, or park lands; prime agricultural lands; special sources of water; and tundra, coral reefs or rain forests.

e. Reasonableness and appropriateness of the proposed budget.

- Is the estimated budget reasonable and appropriate and does it adequately support the applicant's understanding of the effort?
- Is the estimated budget commensurate with the effort proposed, i.e., what is the value of the Facility and its functions relative to the proposed budget?

3. Other Selection Factors.

- The selection official will consider the following program policy factors in the selection process:
  - Integration of proposed facility with other components of the Genomics: GTL program.
  - Strategy for identification of the site for facility, i.e., combining construction and/or renovation of existing space and/or leasing of space, and strategy for developing synergies between this new facility and existing facilities, infrastructure, and science.
  - Strategy for development of funding for facility, including but not limited, to cost sharing and DOE funding.

B. REVIEW AND SELECTION PROCESS.

1. Merit Review.

Applications that pass the initial review will be subjected to a merit review in accordance with the guidance provided in the "Department of Energy Merit Review Guide for Financial Assistance and Unsolicited Proposals." This guide is available under Financial Assistance, Regulations and Guidance at http://professionals.pr.doe.gov/ma5/ma-5web.nsf/?Open.

2. Selection.

The Selection Official will consider the merit review recommendation, Federal official's review, program policy factors, and the amount of funds available. As part of the selection process, DOE reserves the right to seek clarifications in writing from those applications deemed to have the highest scientific merit in order to facilitate the selection process.

3. Discussions and Award.

The Government may enter into discussions with the selected applicant for any reason deemed necessary, including but not limited to: (1) the budget is not appropriate or reasonable for the requirement; (2) only a portion of the application is selected for award; (3) the Government needs additional information to determine that the recipient is capable of complying with the requirements in 10 CFR Part 600; and/or (4) special terms and conditions are required. Failure to resolve satisfactorily the issues identified by the Government will preclude award to the selected applicant.

C. ANTICIPATED NOTICE OF SELECTION AND AWARD DATES.

DOE anticipates notifying the applicant selected for award in June 2006 and making an award in August 2006.

Part VI - AWARD ADMINISTRATION INFORMATION

A. AWARD NOTICES.

1. Notice of Selection.

DOE will notify the applicant selected for award. This notice of selection is not an authorization to begin performance. (See Part IV.G with respect to the allowability of pre-award costs.)

Organizations whose applications have not been selected will be advised as promptly as possible. This notice will explain why the application was not selected.

2. Notice of Award.

If the selected applicant is a non-FFRDC, a Notice of Financial Assistance Award issued by the Contracting Officer is the authorizing award document. It normally includes, either as an attachment or by reference: 1. Special Terms and Conditions; 2. Applicable program regulations, if any; 3. Application as approved by DOE/NNSA; 4. DOE assistance regulations at 10 CFR Part 600, or, for Federal Demonstration Partnership (FDP) institutions, the FDP terms and conditions; 5. National Policy Assurances To Be Incorporated As Award Terms; 6. Budget Summary; and 7. Federal Assistance Reporting Checklist and Instructions, which identifies the reporting requirements.

If the selected applicant is an FFRDC, DOE/NNSA will fund a DOE/NNSA FFRDC contractor through the DOE field work proposal system.

B. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS.

1. Administrative Requirements.

The administrative requirements for DOE grants and cooperative agreements are contained in 10 CFR Part 600 (See: http://ecfr.gpoaccess.gov), except for grants made to Federal Demonstration Partnership (FDP) institutions. The FDP terms and conditions and DOE FDP agency specific terms and conditions are located on the National Science Foundation web site at http://www.nsf.gov/awards/managing/fed_dem_part.jsp.

2. Special Terms and Conditions and National Policy Requirements.

Special Terms and Conditions and National Policy Requirements.
The DOE Special Terms and Conditions for Use in Most Grants and Cooperative Agreements are located at http://grants.pr.doe.gov. The National Policy Assurances To Be Incorporated As Award Terms are located at http://grants.pr.doe.gov.

Intellectual Property Provisions.
The standard DOE intellectual property provisions applicable to the various types of applicants are located at http://www.gc.doe.gov/techtrans/sipp_matrix.html.

Statement of Substantial Involvement.
Either a cooperative agreement or DOE field work proposal may be awarded under this program announcement. If the award is a cooperative agreement, the DOE Contract

Specialist and DOE Project Officer will negotiate a Statement of Substantial Involvement prior to award.

DOE Subcontract Consent.
DOE reserves the right to require the awardee to obtain written approval of the Contracting Officer prior to placement of any engineering, design, and construction subcontract(s).

C. REPORTING.

Attached to this FOA is a Federal Assistance Reporting Checklist and Instructions (Attachment A), which includes reporting requirements that may be required if a cooperative agreement is awarded. In addition, for informational purposes, DOE anticipates requiring at least quarterly reports for purposes of tracking project schedule, costs, and performance to ensure implementation of appropriate project controls (e.g., Earned Value Management). However, DOE reserves the right to negotiate reporting requirements after selection but prior to award.

PART VII - QUESTIONS/AGENCY CONTACTS

A. QUESTIONS.

Questions regarding the content of the announcement must be submitted through the "Submit Question" feature of the DOE Industry Interactive Procurement System (IIPS) at http://e-center.doe.gov. Locate the program announcement on IIPS and then click on the "Submit Question" button. Enter required information. You will receive an electronic notification that your question has been answered. DOE/NNSA will try to respond to a question within 3 business days, unless a similar question and answer have already been posted on the website.

Questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov. DOE/NNSA cannot answer these questions.

B. AGENCY CONTACT.

Name: Vicki L. Phillips
E-mail: vicki.phillips@ch.doe.gov
FAX: 630-252-5045

PART VIII - OTHER INFORMATION

A. MODIFICATIONS.

Notices of any modifications to this announcement will be posted on Grants.gov and the DOE Industry Interactive Procurement System (IIPS). You can receive an email when a modification or an announcement message is posted by joining the mailing list for this announcement through the link in IIPS. When you download the application at Grants.gov, you can also register to receive notifications of changes through Grants.gov.

B. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE.

DOE reserves the right, without qualification, to reject any or all applications received in response to this announcement and to select any application, in whole or in part, as a basis for negotiation and/or award.

C. COMMITMENT OF PUBLIC FUNDS.

The Contracting Officer is the only individual who can make an award or commit the Government to the expenditure of public funds. A commitment by other than the Contracting Officer, either explicit or implied, is invalid.

D. PROPRIETARY APPLICATION INFORMATION.

Patentable ideas, trade secrets, proprietary or confidentional commercial or financial information, disclosure of which may harm the applicant, should be included in an application only when such information is necessary to convey an understanding of the proposed project. The use and disclosure of such data may be restricted, provided the applicant includes the following legend on the first page of the project narrative and specifies the pages of the application which are to be restricted:

"The data contained in pages _____ of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data herein to the extent provided in the award or required by law. This restriction does not limit the government's right to use or disclose data obtained without restriction from any source, including the applicant."

To protect such data, each line or paragraph on the pages containing such data must be specifically identified and marked with a legend similar to the following:

"The following contains proprietary information that (name of applicant) requests not be released to persons outside the Government, except for purposes of review and evaluation."

E. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL.

In conducting the merit review evaluation, the Government may seek the advice of qualified non-Federal personnel as reviewers. The Government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The applicant, by submitting

its application, consents to the use of non-Federal reviewers/administrators. Non-Federal reviewers must sign conflict of interest and non-disclosure agreements prior to reviewing an application. Non-Federal personnel conducting administrative activities must sign a non-disclosure agreement.

F. INTELLECTUAL PROPERTY (IP) DEVELOPED UNDER THIS PROGRAM.

Patent Rights. DOE intends to issue a Determination of Exceptional Circumstance (DEC) and a new class patent waiver that will apply to an agreement that is not with an existing FFRDC or DOE National Laboratory. The DEC and waiver will be applied as appropriate to the Agreement to an existing FFRDC or DOE National Laboratory. The DEC and waiver will allow DOE to retain greater IP rights than would otherwise be permitted under the Bayh-Dole Act. Pursuant to the DEC and an Agreement DOE will retain ownership of the IP rights regarding the design and operation of the facility, including IP incorporated in the facility. Retention of IP rights will allow DOE to transition the operation of the facility if the recipient of the Agreement is changed, and will further allow DOE to share the facility design with other countries that may wish to design and build similar facilities. The DOE will approve the terms and conditions of the IP rights contained in facility user agreements, including publication of high-throughput protein manufacturing protocols, research targets, and data, including business method patents, trademarks, and copyrights. In addition, DOE would prefer that the Awardee use overhead funds for technology transfer. Use of overhead funds is not required. DOE is prepared to consider proposals to establish privately-funded technology transfer programs in lieu of using overhead funds, but if overhead funds are used, the Awardee must agree to certain conditions set by DOE.

Rights in Technical Data. Except as may be otherwise expressly provided or directed in writing by the DOE Patent Counsel, DOE shall have ownership of and unlimited rights in technical data first produced under the Agreement. Delivery or third party licensing of proprietary software or data developed solely at private expense will not normally be required except as necessary to operate the facility or as specifically negotiated in a particular agreement to satisfy DOE's own needs or to ensure the commercialization of technology developed under a DOE agreement.

Facilities License. DOE will retain a nonexclusive, nontransferable, irrevocable, paid-up license in and to any inventions or discoveries, regardless of when conceived or actually reduced to practice or acquired by Awardee, which are incorporated in the facility as a result of this Agreement (1) to practice or to have practiced by or for the Government at the facility, and (2) to transfer such licenses with the transfer of that facility. The acceptance or exercise by the DOE of the aforesaid rights and license shall not prevent DOE at any time from contesting the enforceability, validity or scope of, or title to, any rights or patents herein licensed.

G. NOTICE OF RIGHT TO REQUEST PATENT WAIVER.

Subject to Paragraph F above, applicants may request a waiver of all or any part of the rights of the United States in inventions conceived or first actually reduced to practice in performance of an agreement as a result of this announcement, in advance of or within 30 days after the effective date of the award. Even if such advance waiver is not requested or the request is denied, the recipient will have a continuing right under the award to request a

waiver of the rights of the United States in identified inventions, i.e., individual inventions conceived or first actually reduced to practice in performance of the award. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784.

H. NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES.

Eligible activities under this program include those which describe and promote the understanding of scientific and technical aspects of the GTL and related research programs, but not those which encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation.

I. REAL PROPERTY.

With respect to the use, management, and disposition of all real property, 10 CFR Part 600.132 shall be applicable to cooperative agreements with institutions of higher education, hospitals, and other nonprofit organizations; 10 CFR Part 600.321 shall be applicable to cooperative agreements with for-profit organizations; and it is anticipated that the terms and conditions of the respective management and operating contract shall apply to awards to FFRDC contractors.

J. ENVIRONMENTAL AND REGULATORY REQUIREMENTS.

The Office of Science (SC) expects facility design, construction and operation to have the same integrity and to be as state-of-the-art as the science that is expected to result from the research supported by SC that is conducted in the facility. Applications to site this Facility, therefore, should demonstrate that consideration of ES&H risks and issues is an integral component of the early planning for the facility. Early identification of ES&H risks and issues can alleviate problems that can affect people and the environment, as well as affect the cost, schedule and management of the facility from design through research operations. SC, therefore, will consider ES&H criteria, as described in Part IV.C.2.VII. among its merit review criteria to support demonstration of early ES&H planning. This will provide an early screening of potential issues and problems, as well as provide a measure of the capability of the applicant in providing for sound ES&H planning as part of the project. SC requires that its new state-of-the-art research facilities “start clean and stay clean” with respect to ES&H.

K. COMPLIANCE WITH THE NATIONAL ENVIRONMENTAL POLICY ACT (NEPA).

DOE will comply with the requirements of NEPA and its implementing regulations (10 CFR 1021 and 40 CFR 1500-1508) prior to taking any action on the proposed project that could have adverse environmental effects or that would limit the choice of reasonable alternatives. After selection, an environmental critique and synopsis will be prepared under 10 CFR 1021.216 to assist in developing the agreement with the institution with the preferred site for the Facility. This synopsis will be incorporated, as appropriate, into any future site-specific NEPA documentation that may be prepared to evaluate the potential environmental consequences of the proposed Facility at the preferred site provided by the host Institution.

ATTACHMENT A

FEDERAL ASSISTANCE REPORTING CHECKLIST AND INSTRUCTIONS

DOE F 4600.2
(12/04)
All Other Editions Are Obsolete

U.S. Department of Energy
FEDERAL ASSISTANCE REPORTING CHECKLIST AND INSTRUCTIONS

1. Identification Number:	2. Program/Project Title:
3. Recipient:	

4. Reporting Requirements:	Frequency	No. of Copies	Addressees
MANAGEMENT REPORTING			
☒ Progress Report	See Note 5a	1	See NFAA Block 11
☒ Special Status Report	A	1 1	See NFAA Block 11 See NFAA Block 12
SCIENTIFIC/TECHNICAL REPORTING			
(Reports/Products must be submitted with appropriate DOE F 241. The 241 forms are available at www.osti.gov/elink.)			
Report/Product — Form			
☒ Final Scientific/Technical Report — DOE F 241.3	F		
☐ Conference papers/proceedings* — DOE F 241.3			
☐ Software/Manual — DOE F 241.4			
☐ Other (see Special Instructions) — DOE F 241.3			
** Scientific and technical conferences only*			
FINANCIAL REPORTING			
☐ SF-269, Financial Status Report			
☒ SF-269A, Financial Status Report (Short Form)	Q,F(See Note 5b)	2	NFAA Blocks 11 and 12
☒ SF-272, Federal Cash Transactions Report	Q(See Note 5c)	2	See Note 5c
CLOSEOUT REPORTING			
☒ Patent Certification	F	2	See NFAA Block 12
☒ Property Certification	F	2	See NFAA Block 12
☐ Other (see Special Instructions)			
OTHER REPORTING			
☒ Other (see Special Instructions)	A(See Note 5d)	3	See NFAA Block 11

FREQUENCY CODES AND DUE DATES:

- A - Within 5 calendar days after events or as specified.
- F - Final; 90 calendar days after expiration or termination of the award.
- Y - Yearly; 90 days after the end of the reporting period.
- S - Semiannually; within 30 days after end of reporting period.
- Q - Quarterly; within 30 days after end of the reporting period.

5. Special Instructions:

a. Progress Reports & Renewal Applications: Progress Reports must be submitted 90 days prior to the anticipated continuation funding date and shall be submitted to the DOE Project Officer via e-mail, regular mail, or fax. Renewal applications must be submitted no later than six months prior to the scheduled expiration of the project period (10 CFR 605.9(h)) and must include a separate section that describes the results of work accomplished through the date of the renewal application (10 CFR 605.9(j)). Renewal applications shall be submitted electronically through DOE's Industry Interactive Procurement System (IIPS) at http://e-center.doe.gov.

b. Financial Status Report (FSR) (SF-269A): When the recipient receives payment via the Department of Treasury Automated Standard Application for Payments System (ASAP), an SF-269A or a statement of the final federal share of costs incurred, in any format, is required. When the recipient receives reimbursement payment via SF-270, the SF-270 satisfies the FSR reporting requirement.

c. Federal Cash Transactions Report (SF-272): A Federal Cash Transactions Report is required to be submitted 30 calendar days following the end of each quarter when the recipient receives payment by ASAP. Reports should be submitted to: U.S. Department of Energy, Chicago Office, ATTN: ACCOUNTING AND FINANCE (CRA), 9800 South Cass Avenue, Argonne, IL, 60439.

d. Other Reporting: Three copies of reports, reprints, conference papers, etc. must be submitted as soon as possible after the event occurs (10 CFR 605.19(a)(3)) when deemed appropriate by the recipient.

Federal Assistance Reporting Instructions (JAN 2005)

I. MANAGEMENT REPORTING

Progress Report

The Progress Report must provide a concise narrative assessment of the status of work and include the following information and any other information identified under Special Instructions on the Federal Assistance Reporting Checklist:

1. The DOE award number and name of the recipient.

2. The project title and name of the project director/principal investigator.

3. Date of report and period covered by the report.

4. A comparison of the actual accomplishments with the goals and objectives established for the period and reasons why the established goals were not met.

5. A discussion of what was accomplished under these goals during this reporting period, including major activities, significant results, major findings or conclusions, key outcomes or other achievements. This section should not contain any proprietary data or other information not subject to public release. If such information is important to reporting progress, do not include the information, but include a note in the report advising the reader to contact the Principal Investigator or the Project Director for further information.

6. Cost Status **(NOTE: <u>Not</u> applicable to research or conference awards issued under 10 CFR Part 605)**. Show approved budget by budget period and actual costs incurred. If cost sharing is required break out by DOE share, recipient share, and total costs.

7. Schedule Status **(NOTE: <u>Not</u> applicable to research or conference awards issued under 10 CFR Part 605)**. List milestones, anticipated completion dates and actual completion dates. If you submitted a project management plan with your application, you must use this plan to report schedule and budget variance. You may use your own project management system to provide this information.

8. Any changes in approach or aims and reasons for change. Remember significant changes to the objectives and scope require prior approval by the contracting officer.

9. Actual or anticipated problems or delays and actions taken or planned to resolve them.

10. Any absence or changes of key personnel or changes in consortium/teaming arrangement.

11. A description of any product produced or technology transfer activities accomplished during this reporting period, such as:

    A. Publications (list journal name, volume, issue); conference papers; or other public releases of results. Attach or send copies of public releases to the DOE Project Officer identified in Block 11 of the Notice of Financial Assistance Award.

    B. Web site or other Internet sites that reflect the results of this project.

    C. Networks or collaborations fostered.

    D. Technologies/Techniques.

    E. Inventions/Patent Applications.

    F. Other products, such as data or databases, physical collections, audio or video, software or netware, models, educational aid or curricula, instruments or equipment.

Special Status Report

The recipient must report the following events by e-mail as soon as possible after they occur:

1. Developments that have a significant favorable impact on the project.

2. Problems, delays, or adverse conditions which materially impair the recipient's ability to meet the objectives of the award or which may require DOE to respond to questions relating to such events from the public. For example, the recipient must report any of the following incidents and include the anticipated impact and remedial action to be taken to correct or resolve the problem/condition:

    a. Any single fatality or injuries requiring hospitalization of five or more individuals.

    b. Any significant environmental permit violation.

    c. Any verbal or written Notice of Violation

of any Environmental, Safety, and Health statutes or regulations.

d. Any incident which causes a significant process or hazard control system failure.

e. Any event which is anticipated to cause a significant schedule slippage or cost increase.

f. Any damage to Government-owned equipment in excess of $50,000.

g. Any other incident that has the potential for high visibility in the media.

II. SCIENTIFIC/TECHNICAL REPORTS

Final Scientific/Technical Report

Content. The final scientific/technical report must include the following information and any other information identified under Special Instructions on the Federal Assistance Reporting Checklist:

1. Identify the DOE award number; name of recipient; project title; name of project director/principal investigator; and consortium/teaming members.

2. Display prominently on the cover of the report any authorized distribution limitation notices, such as patentable material or protected data. Reports delivered without such notices may be deemed to have been furnished with unlimited rights, and the Government assumes no liability for the disclosure, use or reproduction of such reports.

3. Provide an executive summary, which includes a discussion of 1) how the research adds to the understanding of the area investigated; 2) the technical effectiveness and economic feasibility of the methods or techniques investigated or demonstrated; or 3) how the project is otherwise of benefit to the public. The discussion should be a minimum of one paragraph and written in terms understandable by an educated layman.

4. Provide a comparison of the actual accomplishments with the goals and objectives of the project.

5. Summarize project activities for the entire period of funding, including original hypotheses, approaches used, problems encountered and departure from planned methodology, and an assessment of their impact on the project results. Include, if applicable, facts, figures, analyses, and assumptions used during the life of the project to support the conclusions.

6. Identify products developed under the award and technology transfer activities, such as:

   a. Publications (list journal name, volume, issue), conference papers, or other public releases of results. If not provided previously, attach or send copies of any public releases to the DOE Project Officer identified in Block 11 of the Notice of Financial Assistance Award;

   b. Web site or other Internet sites that reflect the results of this project;

   c. Networks or collaborations fostered;

   d. Technologies/Techniques;

   e. Inventions/Patent Applications, licensing agreements; and

   f. Other products, such as data or databases, physical collections, audio or video, software or netware, models, educational aid or curricula, instruments or equipment.

7. For projects involving computer modeling, provide the following information with the final report:

   a. Model description, key assumptions, version, source and intended use;

   b. Performance criteria for the model related to the intended use;

   c. Test results to demonstrate the model performance criteria were met (e.g., code verification/validation, sensitivity analyses, history matching with lab or field data, as appropriate);

   d. Theory behind the model, expressed in non-mathematical terms;

   e. Mathematics to be used, including formulas and calculation methods;

   f. Whether or not the theory and mathematical algorithms were peer reviewed, and, if so, include a summary of theoretical strengths and weaknesses;

   g. Hardware requirements; and

   h. Documentation (e.g., users guide, model code).

Electronic Submission. The final scientific/technical report must be submitted electronically via the DOE Energy Link System (E-Link) at http://www.osti.gov/elink-2413.

Electronic Format. Reports must be submitted in the ADOBE PORTABLE DOCUMENT FORMAT (PDF) and be one integrated PDF file that contains all text, tables, diagrams, photographs, schematic, graphs, and charts. Materials, such as prints, videos, and books, that are essential to the report but cannot be submitted electronically, should be sent to the DOE Award Administrator at the address listed in Block 12 of the Notice of Financial Assistance Award.

Submittal Form. The report must be accompanied by a completed electronic version of DOE Form 241.3, "U.S. Department of Energy (DOE), Announcement of Scientific and Technical Information (STI)." You can complete, upload, and submit the DOE F.241.3 online via E-Link. You are encouraged not to submit patentable material or protected data in these reports, but if there is such material or data in the report, you must: (1) clearly identify patentable or protected data on each page of the report; (2) identify such material on the cover of the report; and (3) mark the appropriate block in Section K of the DOE F 241.3. Reports must not contain any limited rights data (proprietary data), classified information, information subject to export control classification, or other information not subject to release. Protected data is specific technical data, first produced in the performance of the award that is protected from public release for a period of time by the terms of the award agreement.

Conference Papers/Proceedings

Content. The recipient must submit a copy of any conference papers/proceedings, with the following information: (1) Name of conference; (2) Location of conference; (3) Date of conference; and (4) Conference sponsor.

Electronic Submission. Scientific/technical conference paper/proceedings must be submitted electronically-via the DOE Energy Link System (E-Link) at http://www.osti.gov/elink-2413. Non-scientific/technical conference papers/proceedings must be sent to the URL listed on the Reporting Checklist.

Electronic Format. Conference papers/proceedings must be submitted in the ADOBE PORTABLE DOCUMENT FORMAT (PDF) and be one integrated PDF file that contains all text, tables, diagrams, photographs, schematic, graphs, and charts. If the proceedings cannot be submitted electronically, they should be sent to the DOE Award Administrator at the address listed in Block 12 of the Notice of Financial Assistance Award.

Submittal Form. Scientific/technical conference papers/proceedings must be accompanied by a completed DOE Form 241.3. The form and instructions are available on E-Link at http://www.osti.gov/elink-2413. This form is not required for non-scientific or non-technical conference papers or proceedings.

Software/Manual

Content. Unless otherwise specified in the award, the following must be delivered: source code, the executable object code and the minimum support documentation needed by a competent user to understand and use the software and to be able to modify the software in subsequent development efforts.

Submission. Software/manual submissions must be sent to the DOE Award Administrator identified in Block 12 of the Notice of Financial Assistance Award. All software/manual submissions must be furnished on a CD-ROM, 3.5 "floppy disk", or zip disk.

Submittal Form. Each software deliverable and its manual must be accompanied by a completed DOE Form 241.4 "Announcement of U.S. Department of Energy Computer Software." The form and instructions are available on E-Link at http://www.osti.gov/estsc/doef2414.pdf.

III. FINANCIAL REPORTING

Recipients must complete the financial reports identified on the Reporting Checklist in accordance with the report instructions. These standard forms are available at http://www.whitehouse.gov/omb/grants/index.html. Fillable forms are available at http://grants.pr.doe.gov.

IV. CLOSEOUT REPORTS

Final Invention and Patent Report

The recipient must provide a DOE Form 2050.11, "PATENT CERTIFICATION." This form is available at http://www.directives.doe.gov/pdfs/forms/2050-11.pdf and http://grants.pr.doe.gov.

Property Certification

The recipient must provide the Property Certification, including the required inventories of non-exempt property, located at http://grants.pr.doe.gov.